

What is claimed is:

1. Apparatus for coupling optical power into a fiber and separately monitoring optical power, comprising:

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(a) a VCSEL array including a first VCSEL and a second VCSEL coupled in parallel therewith; and

(b) means for monitoring the optical power output by said second VCSEL.

2. Apparatus as set forth in claim 1 wherein said VCSEL array and said means for monitoring are both mounted in a TO can.

3. Apparatus as set forth in claim 2 wherein said TO can includes an optical window through which light output by said first VCSEL may pass.

20 4. Apparatus as set forth in claim 2 wherein light output by said first VCSEL is directed into a fiber attached thereto.

5. Apparatus as set forth in claim 2 wherein said TO can
25 further includes a plurality of electrical connection pins.

6. Apparatus as set forth in claim 5 wherein said first VCSEL is coupled to the same electrical pins as said second VCSEL.

5 7. Apparatus as set forth in claim 1 wherein said first VCSEL is substantially identical to said second VCSEL.

8. Apparatus as set forth in claim 1 wherein said first VCSEL and said second VCSEL are both driven by the same power source.

9. Apparatus as set forth in claim 1 wherein said monitoring means is a monitoring diode.

10. Apparatus as set forth in claim 9 wherein the current of said monitoring diode is proportional to the light emitted by said second VCSEL.

11. Apparatus as set forth in claim 1 wherein said first VCSEL generates an optical data stream.

12. Apparatus for coupling optical power into a fiber and separately monitoring optical power, comprising:

(a) means for outputting an optical data stream; and

(b) means for monitoring the optical power output by said means for outputting, wherein said means for monitoring operates independent of the angle of reflected light and the affects of temperature thereon.

13. Apparatus as set forth in claim 12 wherein said means for outputting further comprises a first VCSEL.

14. Apparatus as set forth in claim 13 wherein said means for monitoring further comprises a second VCSEL connected in parallel with said first VCSEL, driven by the same power source.

15. Apparatus as set forth in claim 14 wherein said first VCSEL is substantially identical to said second VCSEL.

16. Apparatus as set forth in claim 14 wherein said means for monitoring further comprises a monitoring diode.

17. Apparatus as set forth in claim 12 further comprising a TO can within which said means for outputting and said means for monitoring are mounted.

5 18. A VCSEL component for driving a fiber optic, comprising:

- (a) a can having an optical window for coupling optical power into said fiber optic;
- (b) a first VCSEL mounted in said can having a first light output directed toward said optical window;
- (c) a monitoring diode mounted in said can; and
- (d) a second VCSEL mounted in said can having a second light output directed toward said monitoring diode.

20 19. A VCSEL component according to claim 19 wherein said first VCSEL and said second VCSEL are electrically coupled in parallel.

25 20. A VCSEL component according to claim 19 wherein said can has a plurality of electrical connection pins and said first VCSEL is coupled to the same pins as said second VCSEL.

21. A VCSEL component according to claim 19 wherein said first VCSEL is substantially identical to said second VCSEL.

5 22. A method for fabricating a device capable of coupling optical power into a fiber and separately monitoring optical power independent of the angle of reflected light and the affects of temperature thereon, comprising the steps of:

- (a) forming a VCSEL array by coupling in parallel a first VCSEL and a second VCSEL connected to the same power source; and
- (b) mounting said VCSEL array and means for monitoring optical power output by said second VCSEL in a TO can.

23. A method as set forth in claim 23 further comprising the step of forming an optical window in said TO can through
20 which light output by said first VCSEL may pass.

24. A method as set forth in claim 23 further comprising the step of attaching a fiber to said first VCSEL.

25 25. A method as set forth in claim 23 further comprising the step of coupling said first VCSEL and said second VCSEL to the same electrical pins in said TO can.

26. A method as set forth in claim 23 further comprising the step of selecting said first VCSEL to be substantially identical to said second VCSEL.

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27. A method for coupling optical power into a fiber and separately monitoring optical power, comprising the steps of:

- (a) coupling in parallel a first VCSEL and a second VCSEL connected to the same power source;
- (b) generating, via said first VCSEL, an optical data stream; and
- (c) monitoring the optical power output of said second VCSEL to provide an indication of the optical power output by said first VCSEL coupled in parallel therewith.

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28. A method as set forth in claim 28 further comprising the step of mounting the VCSEL array formed by coupling said first VCSEL and said second VCSEL, together with means for monitoring the optical power output of said second VCSEL, in a TO can.

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29. A method for coupling optical power into a fiber and separately monitoring optical power, comprising the steps of:

- 5 (a) outputting an optical data stream utilizing a first VCSEL; and
- (b) monitoring the optical power output by said first VCSEL by separately monitoring the optical output of a second VCSEL coupled in parallel therewith.